CLAIMS

1.   A method for automatic management of demand for non-durables, said
method comprising
    - providing at End-users' premises specialized electronic boxes having
    microprocessor capability for performing the following functions:
        - turning connected non-durable consuming apparatuses on and off,
        - receiving control signals from a Multi Utility provider,
        - calculating whether ON or OFF constitutes a correct condition for any
        connected non-durable consuming apparatus,
    - End-users programming said boxes by setting parameter values in accordance
    with End-users' priorities,
    - broadcasting from a Multi Utility provider a control signal to be received by said
    boxes,
    - said boxes taking automatic turn-off or turn-on action for some non-durable
    consuming apparatuses in accordance with stored control algorithms, parameter
    values set by said End-users and information provided by said control signal, and
    - said boxes transmitting back to said Multi Utility provider instant or semi-instant
    non-durable consumption values at said End-users' premises, thereby collectively
    influencing the Multi Utility provider's pricing of non-durables.

2.   The method of claim 1,
wherein said End-users set parameter values in accordance with estimated
importance of their various apparatuses.

3.   The method of claim 1,
wherein said End-users set parameter values based on pricing of the non-durables.

4.   The method of claim 1,
wherein said Multi Utility provider broadcasts a control signal containing pricing
information regarding said non-durables.

5.   The method of claim 4,
wherein the control signal contains pricing information regarding pricing valid for a
certain time period.

6.   The method of claim 1,

wherein said Multi Utility provider broadcasts a control signal containing information regarding rationing.

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7.   The method of claim 1,

wherein said Multi Utility provider provides at least one of electrical energy, thermal energy, gas and fresh water to a community of End-users.

10   8.   The method of claim 1,

wherein said Multi Utility provider broadcasts the control signal via at least one commercial radio broadcasting station.

9.   The method of claim 8,

15   wherein said commercial radio broadcasting station utilizes any one of the RDS, RBDS and DAB systems for broadcasting the control signal.

10.   The method of claim 1,

wherein said Multi Utility provider broadcasts the control signal via a satellite radio

20   broadcast system.

11.   The method of claim 1,

wherein said boxes transmit back consumption values via any of a telephone network and a mobile telephone network.

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12.   The method of claim 1,

wherein communication between said electronic boxes and said non-durable consuming apparatuses inside said End-users' premises is effected by use of PLC technology, preferably in accordance with an X10 standard.

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13.   The method of claim 1,

wherein any one of said electronic boxes is physically or functionally divided in an intelligent home gateway and a metering gateway,

said intelligent home gateway receiving said control signals, decoding them, calculating ON and OFF conditions for all connected apparatuses and transmitting turn-off and turn-on commands to bring said apparatuses into the calculated condition, while also communicating with said metering gateway, and

5   said metering gateway performing two-way communication with said intelligent home gateway, performing communication with at least one non-durables metering device, and transmitting at least metering data to said Multi Utility provider.

14.   The method of claim 13,

10   wherein said intelligent home gateway transmits commands for turning connected apparatuses in an End-user's premises off and on, via a Power Line Carrier (PLC) system, preferably an X10 system.

15.   The method of claim 13,

15   wherein said intelligent home gateway turns off connected apparatuses in an End-user's premises in accordance with non-durable price thresholds set by the End-user for respective apparatuses or for respective apparatus groups.

16.   The method of claim 13,

20   wherein said intelligent home gateway turns off connected apparatuses in an End-user's premises in accordance with a rationing command from said Multi Utility provider and non-durable consuming apparatus priority settings entered by the End-user.

25   17.   The method of claim 1,
wherein non-durables production in distributed generation units (DG) attached to any of industrial End-users, commercial End-users and groups/communities of private End-users, is governed by said electronic boxes and in accordance with the End-users' settings and priorities.

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18.   The method of claim 17,
wherein a distributed generation unit (DG) attached to a group/community of private End-users is governed by an algorithm taking all said private End-users' settings and priorities into consideration, said algorithm being stored in a computer memory in a

computer dedicated for controlling said distributed generation unit and being in communication with said electronic boxes.

19.   The method of claim 1,
5   wherein service restoration from said Multi Utility provider after an outage situation is effected by broadcasting restoration signals to bring about step-wise turning on loads at End-users' premises by appropriate action by said electronic boxes.

20.   A system for automatic management of demand for non-durables, said system
10   comprising
        - specialized electronic boxes at End-users' premises, with microprocessor
        capability for performing the following functions:
                - turning connected non-durable consuming apparatuses on and off,
                - receiving control signals from a Multi Utility provider,
15   - calculating whether ON and OFF constitutes a correct condition for any
                connected non-durable consuming apparatus,
        said system further comprising
                - non-durable consumption metering devices at said End-users' premises,
                in communication with said electronic boxes, and
20   - a broadcasting network for broadcasting from a Multi Utility provider a control
                signal to be received by said electronic boxes,
        wherein
                - said specialized electronic boxes are programmable by said End-users for
                setting parameter values in accordance with said End-users' priorities,
25   - said boxes are operative to take automatic turn-off and turn-on action for
                some non-durable consuming apparatuses in accordance with stored control
                algorithms, said parameter values and information provided by said control
                signal, and
                - said boxes have transmitting capability for transmitting back to said Multi
30   Utility provider instant or semi-instant non-durable consumption values,
                thereby to collectively influence the Multi Utility provider's pricing of non-
                durables.

21.   The system of claim 20,

wherein said broadcasting network is commercial radio broadcasting network.

22.   The system of claim 20,

5   wherein said broadcasting network is a satellite radio broadcast system.

23.   The system of claim 20,

wherein a return transmission path for transmitting back said consumption values is

via any of a telephone network and a mobile telephone network.

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24.   The system of claim 20,

wherein a communication path between said electronic boxes and said non-durable

consuming apparatuses in said End-users' premises is a wire path, preferably relying

on PLC technology and an X10 standard.

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25.   The system of claim 20,

wherein said broadcasting network includes microprocessor capability for encrypting

data to be broadcast to End-users.

20   26.   The system of claim 20,

including distributed generation units (DG) for additional production of non-durables,

attached to any of industrial End-users, commercial End-users and

groups/communities of private End-users, said distributed generation units being

governed by said electronic boxes and in accordance with the End-users' setting and

25   priorities.

27.   The system of claim 20,

wherein any one of said specialized electronic boxes is physically or functionally

divided in an intelligent home gateway and a metering gateway, said intelligent home

30   gateway being capable of receiving said control signals, decoding them, calculating

ON and OFF conditions for all connected apparatuses and transmitting turn-off and

turn-on commands to bring said apparatuses into the calculated condition, as well as

communicating with said metering gateway, and

said metering gateway being capable of performing two-way communication with said intelligent home gateway, performing communication with at least one non-durables metering device, and transmitting at least metering data to said Multi Utility provider.

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28.   The system of claim 27,

wherein the intelligent home gateway includes at least one of a microprocessor and an embedded controller.

10   29.   The system of claim 28,

wherein an End-user terminal is attached to said intelligent home gateway for presentation of messages to the End-user, decoded by said microprocessor.

30.   The system of claim 27,

15   wherein the intelligent home gateway includes a radio antenna and a radio signalling decoder for at least one of the RDS, RBDS and DAB systems.

31. The system of claim 27,

wherein the intelligent home gateway has connected thereto a satellite reception

20   antenna for receiving a satellite broadcast signal.

32.   The system of claim 27,

wherein the metering gateway includes a microprocessor for decoding information from the intelligent home gateway and from said metering devices.

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33.   The system of claim 20,

wherein said non-durable is electric power, said Multi Utility provider is an Electrical Utility provider and said consumption metering devices are electricity meters.

30   34.   A computer program product containing any of software code portions and computer program elements which, when said computer program product is run on any of a computer, processor and controller, causes said computer processor or controller to carry out those steps of the method according to claim 1 that are executed by said electronic boxes.

35.   The computer program product of claim 34 included in a computer readable medium.

5   36.   A control broadcast signal for providing operator information to specialized electronic boxes at End-users' premises, thereby to enable automatic management of demand for non-durables provided by a Multi Utility provider, said signal containing at least one of pricing information and rationing information.

10   37.   The control broadcast signal of claim 36, wherein the operator information is contained in
- a data field,
- a command field and
- an address field.

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38.   The control broadcast signal of claim 37, wherein said data field is to hold at least pricing data and said command field is to hold at least rationing command instructions, if any, and the address field is to hold at least data regarding which electronic boxes should respond to contents of the data
20   field and the command field.

39.   The control broadcast signal of claim 36, wherein said signal is an encrypted signal.

25   40.   A data communication signal for providing End-user return information to a Multi Utility provider, thereby to enable non-durables delivery control and pricing influenced by demand, said signal containing at least non-durables consumption information.

30   41.   A method for return signalling in a two-way communication network between a Multi Utility Provider and a plurality of End-users having intelligent home gateways and metering point gateways, wherein a broadcast signal wakes up one End-user's gateways at a time for collecting non-durables consumption data, and a SIM card

that is identical for all End-users, is used for establishing telephone or cellular connection to said Multi Utility Provider for delivering said data.

42.   An apparatus for return signalling in a two-way communication network between a Multi Utility Provider and a plurality of End-users, said apparatus being an apparatus at each End-user's premises and comprising

an intelligent home gateway operative to receive a wake-up broadcast signal that triggers metering action, and

a metering point gateway operative to establish telephone or cellular connection to said Multi Utility Provider by means of a SIM card that is identical for all End-users, for delivering metering data regarding the respective End-user's consumption of non-durables.